Executive Summary

In this analysis, cargo capacity needs, approximate acreage, and inland distribution needs were evaluated.

Fleet Technology

The methodology for forecasting future fleet deployment was based on the premise that lines always attempt to deploy the most cost-effective vessels that can be supported by trade density and length of route. Therefore, the consulting team considered constraints such as the Panama Canal, U.S. land bridges, and channel restrictions in overseas ports. These trends in vessel deployments were analyzed by major trade routes—Transatlantic, Transpacific, Round the World (RTW), Pendulum North, Pendulum South, Panama Express, and Suez Express.

Intermodal Issues

The study team examined the planning documents of each target port and collected pertinent information on existing rail facilities and any commentary on rail needs. Working within the context of economic forecasts and trends, this information was synthesized across the port sample to arrive at a characterization of both projected port intermodal status and desired improvements.

Land-Side Congestion

The study focused on congestion in and around the ports, and how on-site and regional congestion and mobility concerns can be dealt with in a systematic manner. These issues include connections between the street and highway system and the port, congestion at key bottlenecks on the port facility, and congestion that affects port cargo on key freight corridors through and between urban areas.

Recommendations for Actions by the Public and Private Sectors

The analysis, as outlined, provides a basis to substantiate actions by the public and private sectors to ensure U.S. ports’ capabilities to service national foreign trade. This analysis was developed by a Blue Ribbon Advisory Panel of industry stakeholders for presentation to the local and federal government agencies. Based on this analysis outlined above and discussions with the industry, the consultant team formulated specific recommendations for presentation to the U.S. Congress in advance of the next round of TEA-21 reauthorization.

Future Needs

It is anticipated that future demand for cargo throughput will exceed the capacity in many regions of the United States. In this analysis, cargo capacity needs, approximate acreage, and inland distribution needs were evaluated.

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Port Capacity
Where current capacity analysis was not available, the consultant team used a computer capacity model derived from a MARAD methodology that analyzes a combination of components and default values to derive the limiting factors within each marine terminal as well as an estimate of the Maximum Practical Capacity (MPC) of the port.

Measure of Port Operational Effectiveness
The consultant team evaluated a range of criteria, including the gross throughput per terminal acre, the ability to serve local industry, the local generator of economic activity, and the ability to serve strategic needs of the national economy. Although these criteria are often used as justification for port development, they are difficult to quantify. Therefore, the consultant team did not address the relative merits of one individual port versus the others.

METHODOLOGY
In preparing this study, the consultant team cataloged 16 representative North American ports based on a predetermined set of criteria that defines the current and future role of each individual port in the U.S. transportation system. This catalog of data was gathered based on existing current master plan information and operator interviews.

Data Sources
The consultant team used data currently available from the American Association of Port Authorities (AAPA), from the port operators, and from extensive port data sources within the team itself to identify the size, location, and characteristics of existing marine terminals.

The port inventory was combined with criteria fields to create a comprehensive database of the selected ports and their primary characteristics.

Containerized Cargo Forecast
Baseline volumes were developed for each of the 16 ports and were segmented by trade route and direction. Econometric forecasts were applied to each trade route by segment and direction, allowing the consultant team to develop macro drivers for each segment of the country. These macro drivers were then applied to the individual ports by market segment and trade route to develop a forecasted growth rate for each port.
EXECUTIVE SUMMARY

The United States is the world’s largest importer and exporter, accounting for 1 billion metric tons or nearly 20% of the annual world ocean-borne trade. All freight moving in, out, and within the U.S. amounts to about 15 billion tons and has a value of $9.1 trillion. Although the vast majority of freight moves domestically, international trade amounts to $2.0 trillion, almost half of which is containerized, manufactured goods. This figure represents almost 27% of the entire Gross Domestic Product (GDP) that is totally dependent on international trade.

By the year 2020, even at moderate rates of economic growth, the total domestic tonnage of freight carried by all U.S. freight systems will increase by approximately 67%, while international trade will nearly double. In this same time interval, every major U.S. container port is projected to at least

The nation’s transportation system is the lifeblood of our economy. Without additional investment in our infrastructure, our system of commerce is impaired, our mobility is restricted, our safety is threatened, our environment is endangered, and our way of life is compromised.

Thomas J. Donohue
President and CEO,
U.S. Chamber of Commerce and President,
National Chamber Foundation

Executive Summary
By 2020, every major U.S. container port is projected to at least double the volume of cargo it is expected to handle, with select East Coast ports tripling in volume and some West Coast ports quadrupling in volume.

double the volume of cargo it is expected to handle, with select East Coast ports tripling in volume and some West Coast ports quadrupling in volume. This immense volume of cargo must pass through the Marine Transportation System (MTS), including approximately 35 deep-water U.S. and Canadian ports that connect the U.S. economy with the rest of the world.

Only through an aggressive program of improvement will the ports keep up with this growing cargo demand. However, improvement of the North American port system presents some unique challenges. Constructing major landfills for port expansion and implementing major channel deepening projects is a decade-long, difficult, and very costly process, with the potential for significant environmental and community impacts. For example, a recently completed Port of Oakland dredging project experienced up-front costs for engineering, permitting, and environmental compliance that exceeded the actual cost of the dredging. The United States is now in a situation where its ports and intermodal terminals can no longer build their way out of capacity problems; they must do more, do it faster, and do it cheaper with fewer resources than ever before.

Not only are ports facing capacity challenges, they are also seen as the “front line” in a war against international terrorism. The irony is that ports have always had to protect themselves from intrusion, theft and sabotage, but now they are expected to be the gatekeepers for the entire supply chain, preventing the illegal entry of terrorists and weapons of mass destruction. The ports are expected to accomplish this without interruption of service and without additional cost to the shipper.

Ports are only one element of the U.S. intermodal distribution system. The whole system, which includes rail, trucking and inland freight hubs, is vulnerable to a looming capacity crisis, as well as to sabotage and disruption. Although more and more cargo is passing through the North American container ports, very little capacity has been added to the entire intermodal freight distribution system. At key choke points in the freight system, highways, rail lines, and ports are increasingly congested because concentration of freight movement has absorbed most of the readily available freight capacity. The U.S. highway system has experienced nearly a doubling of vehicle miles traveled in the past 20 years while the total highway mileage has increased only by 1%.

Similarly, the U.S. rail network, a private sector industry that carries about 40% of intercity domestic freight, has increased the volume of freight it carries by 30% since 1980. At the same time, total available track mileage has been reduced by 35%. In 1999, U.S. rail cargo jumped to 1.72 billion tons, a record high, but still 45% below the projected 2020 volume of 2.5 billion tons. Despite major restructuring and rationalization, for current transportation programs. This could include increased priority for freight projects under guaranteed revenue bonds and transportation financing programs. These existing financing tools, which are currently managed by the US DOT, should be modified to be more freight friendly with lower eligibility thresholds.

• Redirect the Ethanol Tax: Currently there is a 5.3-cent subsidy per gallon on the use of ethanol that costs the Highway Trust Fund (HTF) $1 billion annually. The fund loses an additional billion dollars annually of the ethanol tax deposited to the General Fund rather than to the HTF. Combined, the two actions have reduced highway account revenues by $2 billion per year for ethanol-blended fuel. This tax could be returned to the HTF to help fund intermodal projects.

• Repeal the Railroad Diesel Fuel Tax: Repeal and return the 4.3-cent deficit reduction tax on diesel fuel assessed against the railroads. This would free up $175 million per year that the railroads could direct into capital projects.

• Issue Tax Credit Bonds: The American Association of State Highway and Transportation Officials (AASHTO) proposes a semi-private Transportation Finance Corporation (TFC) to issue Tax Credit Bonds. Under the TFC, $60 billion in bonds would be issued from 2004 to 2009, including $5 billion in a capital revolving fund, which could be applied to intermodal projects. The premise is that the TFC and the sale of the bonds would address a shortfall in the HTF.

• Redirect Customs Revenues: Currently, the U.S. Treasury collects customs revenues as customs duties. In FY 1996, customs revenues totaled $22.3 billion, of which about 70% ($15.6 billion) is attributable to cargo moving through seaports. All or a portion of these revenues could be directed at seaport and intermodal system enhancements.

• Increase the Federal Gasoline Tax: Proponents argue that a modest increase in the federal gasoline tax would add revenues to meet the increasing demands on the surface transportation infrastructure system. An increase in the federal gasoline tax should not be considered until all current HTF revenues are fully utilized. Furthermore, many in the trucking industry believe that a fuel tax increase is not justified in the foreseeable future, particularly if the industry continues to face barriers to increased profitability.

• Fund a National Freight Transportation Bank: A national bank could be created to stimulate freight investments. It would be modeled after the Freddie Mac or Fannie Mae, two institutions that have been

“Our nation must not underestimate the magnitude of the freight capacity issues facing our transportation system and our economy. Intermodal traffic is increasing at a rate much greater than our current ability to satisfy the growth. The solution is not singular or simple, yet I believe this study provides a comprehensive view of the issues, as well as recommendations for a solution.”

Jeff Crowe, Chairman and CEO, Landstar System, Inc. and Vice Chairman, U.S. Chamber of Commerce
• **Brownfield Conversion:** The current Brownfield programs for remediation and reuse of abandoned industrial property should be aggressively enhanced where conversion for freight use is possible. Existing Brownfield sites should be catalogued for possible freight conversion, and a fast-track, preapproval status should be designated for those sites with high freight potential.

• **Freight Land Banking:** If lands around major freight facilities are not preserved for freight functions, then warehousing and distribution are pushed to the suburbs or countryside. Adequate land must specifically be protected for future freight projects in growing urbanized areas to prevent “freight sprawl” and the attendant problem of added emissions, added truck traffic, and extra costs to the national freight bill.

**Building Block Five: Labor Integrated into National Freight Policy**

The USDOT must launch an Intermodal Labor and Management Productivity Improvement Program to refine work rules, and ensure the intelligent implementation of new technologies. Now is the time for a more creative approach for aligning labor issues with productivity issues. Representatives from the major transportation unions must be engaged in the Cooperative Freight Research Program to ensure that new technologies could be implemented by the existing work force. This participation of labor would also ensure that new work rules could be developed to accommodate an evolving industry.

As a part of this program, labor representatives should be included in the newly formed Freight Advisory Committee to ensure that committee recommendations are sensitive to labor issues. At the same time, labor experts must be available to advise the National Cooperative Freight Research Program about the potential impact of new technology on current labor practices and to help craft a framework for future management and labor agreements.

**Building Block Six: Funding Options**

Realization of a coherent and effective National Freight Policy would be a complex and expensive effort that requires the cooperation of many disparate public and private entities. Therefore, the avenues for funding these activities must be incorporated into the overall National Freight Policy program, or its implementation will ultimately fail. Several options have been proposed for funding the National Freight Program, which should be explored further to evaluate their potential viability. Without endorsing any specific funding proposal, the options that were identified are summarized briefly below:

- Expand Eligibility for Existing TEA-21 Programs: Consider a number of expanded eligibility areas
- The rail industry now finds itself short of capacity in certain congested metropolitan areas, most predominantly Chicago, and along key mainlines.
- Of total domestic freight, about 9% is carried by the MTS on its network of inland waterways and by coastal feeder barges. Yet funding for channel, lock, and levee improvements has, in fact, decreased over the past 20 years.

This study concludes that the U.S. port and intermodal freight transportation system is now being operated in many areas at the limits of its maximum capacity. Should any component of the system break down, more than one-fourth of the national economy will be crippled. Such breakdowns have partially occurred in the past, and will most certainly occur in the future. The paradox is that the United States has significant reserve capacity in its freight transportation system; it is simply located in the wrong place to relieve the most critical choke points. The U.S. lacks a national program for freight transportation planning and development to focus critical scarce resources on the choke points at key gateways and corridors.

Further, this study concludes that there is no coordinated approach to an “intermodal system” as such. Rather, transportation planning takes place at the Metropolitan Planning Organization (MPO) level with little regard for national transportation priorities. Moreover, this intermodal system is merely an aggregation of multiple, private and public modes, each of which is stovepiped within its own individual areas of activity. That is, each mode has a vertically integrated information system, vertically integrated planning, development, and management programs; and vertically integrated funding mechanisms with minimal “cross-talk” between modes.

Therefore, there must be a comprehensive, national effort with a joint public/private partnership to identify the modes into a coherent intermodal freight transportation system. This study recommends that the actions described below be initiated as soon as possible.

**National Freight Policy**

The United States must develop a National Freight Policy that will institutionalize and coordinate a separate freight program within the U.S. Department of Transportation (USDOT) to plan and promote a national intermodal system that relies on timely freight data and effective information technology (IT). To accomplish this, a Federal Freight Advisory Committee must be created to produce specific, targeted results in areas where infrastructure shortfalls have been identified:

- A clearly defined freight program within the USDOT
- A national intermodal planning and development initiative
Financing Options

New financing options for intermodal freight infrastructure enhancements must be developed to ameliorate existing and future impediments to an effective intermodal freight system. This study recognizes that its mission is not only to identify one source of funding but also to describe the need for funding, and to present funding options. Among these options are expanded eligibility for existing TEA-21 programs, a National Freight Transportation Bank, or a new series of Transportation Bonds.

Building Block Four: A Coherent Environmental Regulatory Process

The regulatory obstacles to intermodal freight improvements must be remedied. Federal regulations must be created that would crosscut conflicting state and local environmental constraints to the development of the national intermodal freight system. The permitting process to dredge channels the process to address Brownfield’s conversion and regulations to protect the land around intermodal hubs and corridors for freight related development are but three of the regulatory processes, that must be reformed within the USDOT and the Environmental Protection Agency (EPA) planning regulations. Among these reforms, some of the more immediate needs are as follows:

- Streamlined Permitting: Reform current procedures that create conflicts between federal and state regulators to give project sponsors a “one-stop shop” for environmental evaluation and compliance. This one-stop shop must include comprehensive regional and categorical permits for routine port construction and maintenance projects. In addition, create realistic costs and timeframes for permit evaluation and eliminate the current practice of “regulation by lawsuit.”

- A coherent environmental regulatory process
- Freight data and IT
- Labor integrated into national freight policy

James H. Burnley IV, Panel Chair, Blue Ribbon Advisory, Partner, Venable LLP, and former Secretary of Transportation

“Transportation is the critical link for both international trade and our domestic economy. We must proactively address the current crisis in the capacity of our intermodal system.”

U.S industrial strength has been based on rapid, cheap, but dependable freight transport. However, it is an overloaded system, burdened by parochial planning approaches, and outdated labor and productivity standards that are not in step with the dictates of global trading patterns. The facts presented in this study will demonstrate a potential scenario of catastrophic breakdown in the national cargo delivery system. Although some of these findings are troubling, this study documents economic risks to the nation that have been overlooked for too long. It is imperative that these risks be eliminated before the nation’s economic stability and its security are jeopardized.

Quantifies cargo volumes moving through the intermodal system and tracks the complex interactions between the cargo modes. The Bureau of Transportation Statistics manages the Commodity Flow Survey, but this effort does not provide timely origin-destination data that are critical to the management of the U.S. intermodal freight network. Implementation of this data system would serve the nation’s interest in the following ways:

- Private sector data would be made available to authorized users through implementation of global access protocols. While it must protect the proprietary nature of commercially sensitive information, a national clearinghouse for timely cargo data is the key element of a true intermodal freight system.
- National programs to improve intermodal throughput capacity could be targeted on a systemwide basis because transportation planners would understand what types of cargo move, when they move, and how they move.
- Improvements, that are made under the GNS program, could be evaluated as they are implemented and, if necessary, adjusted to accommodate changing cargo flows.
- Container security should be a high priority under this program.
- National security programs to track the movement of hazardous materials would be facilitated through the improvement of “in-transit visibility.”

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